

UNIVERSITI TEKNOLOGI MARA

**TOXICITY EVALUATION OF *SCHISANDRA*
*CHINENSIS***

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ABSTRACT

Schisandra chinensis was famously used in the Chinese traditional medicines as hepatoprotective, antioxidant, physical performance improvement and anticarcinogenic. This study was designed to determine the toxic fraction of *Schisandra chinensis*. In an acute toxicity test, the single dose of 200, 400, 800, 1200 and 1600 mg/kg were administered to the out-bred *Mus musculus* male mice. The oral LD₅₀ value of the hexane extract in mice was 1420 mg/kg. Sedation, high respiration rate, urination, eye secretion, defecation and tremors were observed in mice between 6 to 72 hours. The first fraction of hexane extract with the least polar compound have the lowest IC₅₀ and IC₁₀ values (2.5 mg/ml and 0.75 mg/ml, respectively) followed by the second fraction (IC₅₀ = 50 mg/ml, IC₁₀ = 4.5 mg/ml).

CHAPTER 1

INTRODUCTION

Fructus Schisandrae consists of two members, *Schisandra chinensis* (Turcz.) Baill. (Northern Schisandra) and *Schisandra sphenanthera* Rehd. et Wils. (Southern Schisandra) (He *et al.*, 1997). The fully ripe, sun-dried fruit have sour, sweet, salty, hot and bitter tastes. The classical treatise on Chinese herbal medicine describes schisandra as a high-grade herbal drug useful for a wide variety of medical conditions (Jennifer, 2006).

Schisandra chinensis has been reported to contain dibenzo[a,c]cyclooctene derivatives (lignan), schisandrin, dimethyl diphenyl bicarboxylate (DDB), gomisins A, deangeloylgomisin, schisantherin D and epigomisin O. There are also sugars, tannins, color substances, essential oils (citral, β -chamigrene, β -camigrenol, β -bisabolene and sesquicarene), organic acids (citric, malic, fumaric and tartaric acid), ascorbic acid, α -tocopherol acetate and metals (copper, manganese, nickel and zinc) have been isolated from the fruits (Hancke *et al.*, 1999; Ip *et al.*, 1996).

As the hexane extract obtained from methanolic extract developed with toluene-ethyl acetate (9:1), the compound wuweizisu A (deoxyschisandrin or schisandrin A), wuweizisu B (schisandrin B), and wuweizisu C (schisandrin C) were obtained while